FlyBy Math™ Alignment
New York SED Math Standards

Problem Solving Strand

Students will solve problems that arise in mathematics and in other contexts.

Standard	***FlyBy Math*™ Activities**
7.PS.6 Represent problem situations verbally, numerically, algebraically, and/or graphically	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

Students will apply and adapt a variety of appropriate strategies to solve problems.

Standard	***FlyBy Math*™ Activities**
7.PS.7 Understand that there is no one right way to solve mathematical problems but that different methods have advantages and disadvantages	--Compare predictions, calculations, and experimental evidence for several aircraft conflict problems.
7.PS.11 Work in collaboration with others to solve problems	--Conduct a simulation of each airplane scenario.

Communication Strand

Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

Standard	***FlyBy Math*™ Activities**
7.CM.4 Share organized mathematical ideas through the manipulation of objects, numerical tables, drawings, pictures, charts, graphs, tables, diagrams, models, and symbols in written and verbal form	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

Connections Strand	
Students will recognize and use connections among mathematical ideas.	
Standard	***FlyBy Math™* Activities**
7.CN.1 Understand and make connections among multiple representations of the same mathematical idea	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
7.CN.3 Connect and apply a variety of strategies to solve problems	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Predict outcomes and explain results of mathematical models and experiments.
Students will understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	
Standard	***FlyBy Math™* Activities**
7.CN.4 Model situations mathematically, using representations to draw conclusions and formulate new situations	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Predict outcomes and explain results of mathematical models and experiments.
Students will recognize and apply mathematics in contexts outside of mathematics.	
Standard	***FlyBy Math™* Activities**
7.CN.7 Apply mathematics to problem situations that develop outside of mathematics	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.
7.CN.8 Investigate the presence of mathematics in careers and areas of interest.	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

Representation Strand	
Students will create and use representations to organize, record, and communicate mathematical ideas.	
Standard	***FlyBy Math™* Activities**
7.R.1 Use physical objects, drawings, charts, tables, graphs, symbols, equations, or objects created using technology as representations	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
7.R.3 Recognize, compare, and use an array of representational forms	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Students will select, apply, and translate among mathematical representations to solve problems.	
Standard	***FlyBy Math™* Activities**
7.R.6 Use representations to explore problem situations	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
7.R.7 Investigate relationships between different representations and their impact on a given problem	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
Students will use representations to model and interpret physical, social, and mathematical phenomena.	
Standard	***FlyBy Math™* Activities**
7.R.9 Use mathematics to show and understand physical phenomena (e.g., make and interpret scale drawings of figures or scale models of objects)	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

Algebra Strand	
Students will perform algebraic procedures accurately.	
Standard	***FlyBy Math™* Activities**
7.A.6 Evaluate formulas for given input values (surface area, rate, and density problems)	--Use the distance-rate-time formula to predict and analyze aircraft conflicts.
Students will recognize, use, and represent algebraically patterns, relations, and functions.	
Standard	***FlyBy Math™* Activities**
7.A.7 Draw the graphic representation of a pattern from an equation or from a table of data	-- Represent distance, rate, and time data using line plots, bar graphs, and line graphs.

Statistics and Probability Strand	
Students will collect, organize, display, and analyze data.	
Standard	***FlyBy Math™* Activities**
7.S.1 Identify and collect data using a variety of methods	-- Conduct a simulation of each airplane scenario. -- Represent distance, rate, and time data using line plots, bar graphs, and line graphs.
7.S.6 Read and interpret data represented graphically (pictograph, bar graph, histogram, line graph, double line/bar graphs or circle graph)	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.